

# North Pacific Fishery Management Council

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January 29, 1998

## DRAFT AGENDA

**131st Plenary Session  
North Pacific Fishery Management Council  
February 3-8, 1998  
Anchorage Hilton Hotel  
Anchorage, Alaska**

The North Pacific Fishery Management Council will meet jointly with the Alaska Board of Fisheries on Tuesday, February 3, 1998 at the Hilton Hotel in Anchorage, Alaska. The Council will begin its normal plenary session at 8:00 a.m. on Wednesday, February 4, continuing through at least Sunday, February 8, 1998. Other meetings to be held during the week are:

### Committee/Panel

Scientific and Statistical Committee  
Advisory Panel  
Ecosystems Committee  
NMFS public meeting on Gear Impact Study  
NMFS public workshop on Preliminary  
Essential Fish Habitat Reports

### Beginning

8:00 a.m., Monday, February 2  
8:00 a.m., Monday, February 2  
7:00 p.m., Tuesday, February 3  
7:00 p.m., Wednesday, February 4  
7:00 p.m., Thursday, February 5

All meetings except Council executive sessions are open to the public. Other committee and workgroup meetings may be scheduled on short notice during the week.

## **INFORMATION FOR PERSONS WISHING TO PROVIDE PUBLIC COMMENTS**

Sign-up sheets are available at the registration table for those wishing to provide public comments on a specific agenda item. Sign-up must be completed before public comment begins on that agenda item. Additional names are generally not accepted after public comment has begun.

Submission of Written Comments. Any written comments and materials to be included in Council meeting materials must be received at the Council office **by 5:00 p.m. on Wednesday, Jan. 28, 1998.** Written and oral comments should include a statement of the source and date of information provided as well as a brief description of the background and interests of the person(s) submitting the statement. **Material received after the deadline will be placed in a special notebook for late materials, but will not be copied or included in meeting notebooks for this meeting. It is the submitter's responsibility to provide adequate copies of comments after the deadline.** Materials provided during the meeting for distribution to Council members should be provided to the Council secretary. A minimum of 18 copies is needed to ensure that Council members, the executive director, NOAA General Counsel and the official meeting record each receive a copy. If you also wish copies to be made available for the Advisory Panel (23), Scientific and Statistical Committee (12), staff (10) or the public (50) after the pre-meeting deadline, they must also be provided by the submitter.

## FOR THOSE WISHING TO TESTIFY BEFORE THE ADVISORY PANEL

The Advisory Panel has revised its operating guidelines to incorporate a strict time management approach to its meetings. Rules for testimony before the Advisory Panel have been developed which are similar to those used by the Council. Members of the public wishing to testify before the AP must sign up on the list for each topic listed on the agenda. Sign-up sheets are provided in a special notebook located at the back of the room. The deadline for registering to testify is when the agenda topic comes before the AP. The time available for individual and group testimony will be based on the number registered and determined by the AP Chairman. The AP may not take public testimony on items for which they will not be making recommendations to the Council.

## FOR THOSE WISHING TO TESTIFY BEFORE THE SCIENTIFIC AND STATISTICAL COMMITTEE

The usual practice is for the SSC to call for public comment immediately following the staff presentation on each agenda item. In addition, the SSC will designate a time, normally at the beginning of the afternoon session on the first day of the SSC meeting, when members of the public will have the opportunity to present testimony on any agenda item. The Committee will discourage testimony that does not directly address the technical issues of concern to the SSC, and presentations lasting more than ten minutes will require prior approval from the Chair.

## COMMONLY USED ACRONYMS

<b>ABC</b>	Acceptable Biological Catch	<b>MMPA</b>	Marine Mammal Protection Act
<b>AP</b>	Advisory Panel	<b>MRB</b>	Maximum Retainable Bycatch
<b>ADF&amp;G</b>	Alaska Dept. of Fish and Game	<b>MSY</b>	Maximum Sustainable Yield
<b>BSAI</b>	Bering Sea and Aleutian Islands	<b>mt</b>	Metric tons
<b>CDQ</b>	Community Development Quota	<b>NMFS</b>	National Marine Fisheries Service
<b>CRP</b>	Comprehensive Rationalization Program	<b>NOAA</b>	National Oceanic & Atmospheric Adm.
<b>EA/RIR</b>	Environmental Assessment/Regulatory Impact Review	<b>NPFMC</b>	North Pacific Fishery Management Council
<b>EEZ</b>	Exclusive Economic Zone	<b>OY</b>	Optimum Yield
<b>EFH</b>	Essential Fish Habitat	<b>POP</b>	Pacific ocean perch
<b>FMP</b>	Fishery Management Plan	<b>PSC</b>	Prohibited Species Catch
<b>GOA</b>	Gulf of Alaska	<b>SAFE</b>	Stock Assessment and Fishery Evaluation Document
<b>IBQ</b>	Individual Bycatch Quota	<b>SSC</b>	Scientific and Statistical Committee
<b>IPHC</b>	International Pacific Halibut Commission	<b>TAC</b>	Total Allowable Catch
<b>ITAC</b>	Initial Total Allowable Catch	<b>VBA</b>	Vessel Bycatch Accounting
<b>MSFCMA</b>	Magnuson-Stevens Fishery Conservation and Management Act	<b>VIP</b>	Vessel Incentive Program

**DRAFT AGENDA**  
**131st Plenary Session**  
**North Pacific Fishery Management Council**  
**February 4-8, 1998**  
**Anchorage Hilton Hotel**  
**Anchorage, Alaska**

		<u>Estimated Hours</u>
A.	CALL MEETING TO ORDER	
	(a) Approval of Agenda	•
B.	REPORTS	
	B-1 Executive Director's Report	•
	B-2 NMFS Management Report (Includes IFQ Enforcement Report)	•
	B-3 IPHC Report on 1998 Quotas	•
		(2 hours for A/B items)
C.	NEW OR CONTINUING BUSINESS	
	C-1 <u>Observer Program</u> Final action on third-party arrangement.	(3 hours)
	C-2 <u>Halibut Management</u> (a) Sitka Sound local area plan: Final action. (b) General area management plans: Adopt protocol.	(2 hours)
	C-3 <u>Inshore-Offshore 3</u> Preliminary review of analysis to date.	(8 hours)
	C-4 <u>Essential Fish Habitat</u> (a) Preliminary review of amendment. (b) Comment on interim final rule.	(2 hours)
	C-5 <u>Scallop Management</u> (a) Amendment 3: Status report. (b) Limited entry: Discussion.	(2 hours)
	C-6 <u>License Limitation /CDQs</u> (a) Crab buyback program: Status report and discussion. (b) LLP potential amendments: Discussion and direction. (c) Multispecies CDQ: Status of regulations and discussion of CDQ vessel exemption issue. (d) Moratorium extension: Task staff.	(6 hours)
	C-7 <u>Catch &amp; Bycatch Measurement</u> (a) Magnuson-Stevens Act requirements on catch and bycatch estimation: NMFS and ADF&G Reports. (b) Salmon bycatch retention regulations.	(2 hours)

- C-8 International Fisheries (1 hour)
  - (a) Update on transboundary pollock issues.
  - (b) Update on Pacific pelagics. (0.5 hours)
- C-9 Research Priorities
  - Final action.
- D. **FISHERY MANAGEMENT PLANS**
- D-1 Groundfish Amendments with Action Required (4 hours)
  - (a) GOA trimester pollock allocations: Final action.
  - (b) W/C GOA stand-down/preregistration: Final action.
  - (c) SR/RE bycatch allocation: Final action.
  - (d) Streamline groundfish TAC specifications: Initial review.
  - (e) EGOA boundary changes: Initial review.
- D-2 General Issues for Discussion (4 hours)
  - (a) Trip limits in W/C GOA.
  - (b) Vessel Bycatch Accounts: Report.
  - (c) Bycatch amendments: Discussion and direction.
  - (d) Maximum retainable bycatch standards.
  - (e) IR/TU Implementation.
- E. **PUBLIC COMMENTS**
- F. **CHAIRMAN'S REMARKS AND ADJOURNMENT**

Total Agenda Hours: 36.5

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**TIME SUMMARY**

Total agenda hours	36.50 hours
Lunches - 5 days (1 hr ea)	5.00 hours
Breaks (3/day, 15 min ea x 5 days)	<u>3.75 hours</u>
Total estimated hours required:	45.25 hours
Meeting as follows:	
Wed.-Sun. - 8am-5:30pm	= 9.5 hours x 5 = 47.5 hours

**ADVISORY PANEL MINUTES  
DECEMBER 8-11, 1997  
ANCHORAGE, ALASKA**

Advisory Panel members in attendance:

Alstrom, Ragnar	Gundersen, Justine
Bruce, John (Chair)	Jones, Spike
Benson, Dave	Madsen, Stephanie (Vice-Chair)
Burch, Alvin	Nelson, Hazel
Cotton, Bruce	Paddock, Dean
Cross, Craig	Roos, John
Falvey, Dan	Stephan, Jeff
Fanning, Kris	Turk, Teresa
Fraser, Dave	Ward, Robert
Fuglvog, Arne	Wurm, Rob
Ganey, Steve	Yutzenka, Grant

Advisory Panel members John Lewis and Lyle Yeck were absent. The Advisory Panel (AP) unanimously approved the minutes from their September 1997 meeting.

**C-1 Observer Program**

The AP recommends the Council postpone release of the EA/RIR until the additional alternative and information requested below can be incorporated and note industry's willingness to perfect the details of this alternative.

*Alternative 4: Modified Research Plan*

- option on obtaining from Congress start-up funds
- identification of the best sampling plan using available resources
- advance notice requirements for getting an observer
- resolve questions on ADF&G request of priority use of fees for crab program
- examination of potential cost recovery plan
- define baseline coverage and sideboards on supplemental programs

The document should include a side by side comparison of the modified research plan and JPA.

The AP recommends the Council direct NMFS to initiate a rollover of the existing observer plan. Motion carries 14/1.

Because of significantly increased costs for the observer program and the economic condition of the industry, the AP recommends the Council request additional funds from NMFS to augment those provided by industry. Motion carries 15/1

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The AP recommends the Council request the Secretary of Commerce and the NLRB to clarify and initiate appropriate policy and regulatory action to permit and authorize vessel and plant owners to fully and equally participate in three-party negotiations between the observer's union, vessel/plant owners and observer contractors that addresses observer activities in processing plants and on fishing vessels. Motion carries 10/2/4.

## C-2(a) Groundfish/Crab License Limitation Program

The AP recommends the Council initiate an EA/RIR to recognize transfers of vessel history under the License Limitation Program (LLP) except those that occurred after June 17, 1995 and where the owner on June 17, 1995 was unable to document a vessel under Chapter 121, Title 46, U.S. Code. Motion carries 19/0/1.

The AP was noticed that the LLP program may not be in place by 1999. Given that information, the knowledge that there is always the chance of a legal challenge and the fact that the moratorium expires at the end of 1998, the AP urges the Council to move ahead with a rollover of the moratorium. Motion carries unanimously (21/0).

Further, the AP recommends the Council initiate a regulatory amendment to adopt a moratorium application closure date as today's date or the soonest possible date that can be legally implemented. Motion carries unanimously (21/0).

The AP recommends the Council initiate an EA/RIR to designate licenses transferred from vessels who used fixed gear to qualify under the LLP as fixed gear only:

- (a) upon issuance, or
- (b) only after transfer.

Motion carries unanimously (21/0).

The AP recommends the Council initiate an amendment to the LLP crab program to include a recent participation clause with the following options:

- (a) general umbrella, and
- (b) species endorsement license

for:

- (a) 1995
- (b) 1996
- (c) 1997
- (d) any combination of a, b and c.

Motion carries unanimously (21/0)

The AP requests the Council direct NMFS to include a field in the electronic reporting program for catcher processors to include the name of the skipper. Motion carries unanimously (21/0).

The AP recommends the Council initiate an amendment to the LLP that prevents transfer of permits from vessels that never held a *federal* fishery permit during the LLP qualifying period. Motion carries unanimously (21/0)

Finally, the AP recommends the Council amend the LLP to make qualifying landing requirements for the Western Gulf of Alaska and BS/AI equal to one landing in each of two of the qualifying years (rather than one). Motion carries 15/5/1.

**C-3 (b) Review IFQ Proposals**

The AP recommends the Council initiate an EA/RIR on the following proposals as recommended by the IFQ Implementation Team:

Proposal #3: Change use caps from lbs to QS units

Proposal #5: Redefine regulatory language on "a change in the corporation or partnership."

Proposal #17: 10% aggregate leasing

Motion carries unanimously (20/0).

The AP requests the Council, at this meeting, act on the AP recommendation on Indirect Ownership, as excerpted below from the September 1997 AP Minutes:

*The AP requests the Council direct staff to develop an EA/RIR on direct and indirect ownership consideration for initial review in December 1997. The AP further recommends the Council request NMFS to continue to use the same interpretation on this issue until final action. Motion carries unanimously.*

Motion carries unanimously (20/0).

**D-1(a, b) BSAI SAFE & Specifications**

The AP recommends the Council approve the 1998 BSAI SAFE document. Motion carries 18/0.

The AP recommends the Council adopt the SSC's ABCs. Motion carries unanimously.

The AP recommends the Council adopt the TACs provided by industry as shown in Attachment 1. Motion carries 18/3.

Two other motions were made, but failed by close votes. One attempted to change the A/B season split to 35% - 65% respectively (failed 12/8) and the other attempted to set the pollock TAC at 10% less than ABC (failed 11/10).

The AP recommends the Council adopt the Trawl Industry Recommended 1998 BSAI Trawl Fisheries PSC Apportionments and Seasonal Allowances as shown in the table below. Motion carries 18/0.

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Fishery Group	Halibut Mortality Cap (mt)		Herring	Red King Crab (animals)	C. bairdi	
					Zone 1	Zone 2
<b>Yellowfin sole</b>	1,005		268	10,000	276,316	1,071,000
Jan 20 - Mar 31		285				
Apr 1 - May 10		210				
May 11- Aug 14		100				
Aug 15 - Dec 31		410				
<b>Rocksole/other flatfish</b>	795		22	75,000*	296,052	357,000
Jan 20 - Mar 29		485				
Mar 30 - June 30		130				
July 1 - Dec 31		180				
<b>Turbot/sablefish/arrowtooth</b>						
<b>Rockfish</b>	75		8			7,000
July 1 - Dec 31						
<b>Pacific cod</b>	1,550		22	7,500	148,224	195,000
<b>Pollock/mackerel/o.species</b>	350		155	7,500	29,408	470,000
Jan 20 - Apr 15		300				
Apr 16 - Dec 31		50				
<b>Pelagic Trawl Pollock</b>			1,239			
<b>TOTAL</b>		<b>3,775</b>	<b>1,714</b>	<b>100,000</b>	<b>750,000</b>	<b>2,100,000</b>

Unused PSC allowances may be rolled into the following seasonal apportionment.

\*Red king crab PSC for the rock sole fishery is apportioned 26,250 inside the 56-56° 10' slice, and 48,750 outside. The apportionment of 26,250 RKC for the 10' slice is available on February 1, 1998.

Industry recommends that the opilio cap not be apportioned between fisheries until fishery specific bycatch data from the opilio savings area are available.

The AP further recommends the Council adopt the Non-trawl Industry Recommended 1998 BSAI PSC Bycatch Allowances and fixed gear Pacific cod seasonal apportionments as shown in the table below. Motion carries unanimously.



# DRAFT

Fishery Group	Halibut Mortality (mt)	Seasonal Apportionment of Pacific cod (mt)		
		ITAC	Reserve	Total
<b>Pacific cod</b>	840			
Jan 1 - April 30	495	65,000	5,735	70,735
May 1 - Sept 14	40	13,792	1,208	15,000
Sept 15 - Dec 31	305	12,243	1,089	13,332
<b>Other Non-Trawl*</b>	60			
<b>Groundfish pot</b>	Exempt			
<b>Total</b>	<b>900 mt</b>			<b>99,068 mt</b>

Note: Unused PSC halibut from first trimester will be rolled into the third trimester. Any unused cod TAC from first trimester will go into third trimester.

Any halibut PSC removed from CDQ fisheries will be replaced from PSC apportioned from the third trimester.

\*Included hook & line fisheries for rockfish and Greenland turbot. Sablefish hook & line fisheries will be exempted from the halibut mortality cap. Jig gear will also be exempted from the halibut mortality cap.

The AP recommends the Council allocate 100% of the pollock TAC to pelagic gear. Motion carries 11/7. This motion was later reconsidered and rescinded. Motion carries 10/6/1.

## MINORITY REPORT D-1 (b) BSAI Specifications - Pollock TAC

We, the undersigned, support a pollock TAC in 1998 of 990,000 metric tons. While we recognize the work of NMFS and the Plan Team in setting an ABC, it is the job of the Council (and the AP as its advisors) to use our own caution, instincts and experience to set catch limits. A more conservative catch level may be warranted given that the status of the EBS pollock stock is, at best, only slightly improved from previous assessments, and the prognosis for the near term future is extremely uncertain at best. Specifically, a more conservative catch limit may be warranted to take into account potential increasing Russian harvest of EBS juvenile pollock in the Navarin Basin (reported and unreported), the poor age structure of EBS pollock stock and the fisheries continued reliance on a single year class, poor recruitment information which appears to rely heavily on a moderately strong 1996 year class which may actually be only average even if this class survives to maturity to sustain the stock, and the increased temporal and spatial concentration of pollock catch in the EBS.

Signed:            Steve Ganey  
                       Dean Paddock  
                       Dan Falvey  
                       Arne Fuglvog  
                       Teresa Turk  
                       David Fraser

**D-1 (c-e) GOA SAFE & Specifications**

The AP recommends the Council accept the GOA 1998 final SAFE document. Motion carries unanimously (20/0).

The AP recommends the Council adopt the 1998 ABCs which is reflected in Attachment 2. Motion carries 20/0.

The AP recommends the Council adopt the TACs for 1998 as listed in Attachment 2. Motion carries 19/3.

The AP recommends the Council adopt the trawl gear and hook and line PSC halibut limits as shown below Motion carries 21/0.

Trawl gear			Hook and Line		
1st quarter	600 mt	(30%)	1st trimester	250 mt	(86%)
2nd quarter	400 mt	(20%)	2nd trimester	15 mt	( 5%)
3rd quarter	600 mt	(30%)	3rd trimester	25 mt	( 9%)
4th quarter	400 mt	(20%)	DSR	10 mt	
2,000 mt			300 mt		

Quarter	Shallow water	Deep water	Total
	Complex	Complex	
1	500 mt	100 mt	600 mt
2	100 mt	300 mt	400 mt
3	200 mt	400 mt	600 mt
4	No apportionment		400 mt

The AP recommends the Council adopt the IPHC recommendations for preseason assumed DMRs for monitoring halibut bycatch mortality in 1998 (Attachment 3). Further, the AP recommends the Council request the IPHC to prepare a report to explain changes in halibut mortality estimates. The report should discuss factors contributing to the increase by haul size, processing mode, seasons, and other factors relevant to differences between vessels and fisheries. Also, that the study currently being done by the IPHC on halibut mortality be reported to the Council, SSC and AP for review next meeting. Motion carries unanimously.

**MINORITY REPORT**  
D-1 (d) GOA Specifications - Pollock TAC

We, the undersigned, oppose setting the GOA pollock TAC equal to ABC in 1998. With roughly a 60% increase in the 1998 ABC,, establishing a conservative buffer between the ABC and TAC would account for conservation concerns presented in the SAFE document while still providing an increase in the TAC available to industry. A conservative buffer between the ABC and TAC may be warranted to take into account the following conservation concerns:

1. The relatively low level of pollock total biomass;
2. The dramatic increase in Central Gulf ABC while the Stellar sea lion population continues to decline in the area;
3. The effect of below average recruitment of pollock in future years which could result in a rapid decline in the pollock stock. Projected below average recruitment of pollock in the 1996-1999 year classes suggests

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the female spawner biomass will fall below B40% by 2000 and total biomass will be reduced by 50% by 2001;

4. Current female spawner biomass levels and the spawning potential ratio are at the lowest estimated levels since 1973, and;
5. Current information indicates that fishing rates may now be higher than at the peak of the fishery.

Signed:           Teresa Turk  
                      Steve Ganey  
                      Dean Paddock

## D-2 Scallop Management

The AP recommends the Council adopt Alternative 2. Motion carries 19/1/1.

## D-3 Groundfish Amendments

### *(a) Western/Central GOA stand-down/preregistration.*

The AP recommends the Council send out for public review, the EA/RIR on Amendment 52/52 (vessel preregistration and 48-hour stand-down), with the addition of:

1. A range of stand-down alternatives from 48 to 96 hours.
2. Options for calculating the stand-down period:
  - (a) gear up or not fishing
  - (b) delivery or check-in at port
3. Stand-down applicable to
  - (a) all trawl vessels
  - (b) only trawl catcher vessels

The AP further recommends Alternative 3 apply only to pollock and Pacific cod trawl fisheries. Motion carries unanimously (21/0)

### *(c) Shortraker/Rougheye - allocation to fixed gear.*

The AP recommends the Council send out for public review, Amendment 53 (allocate shortraker/rougheye rockfish in the Aleutian Islands subarea between vessels using trawl and non-trawl gear). Motion carries 18/0.

## D-4 Groundfish Issues

### *(a) Limited Processing for Catcher Vessels (BSAI/GOA)*

The AP recommends the Council initiate an EA/RIR allowing limited processing for catcher vessels in the BSAI/GOA with the following options:

- Option 1: Allow processing of bycatch amounts of any groundfish species up to the directed fishing standards.

- Option 2: Allow processing of an species, excluding pollock as a target species,
- a. up to 5 mt round weight per day
  - b. up to 18 mt round weight per day for vessels greater than 60 ft

Motion carries 20/1.

***(f) Pollock "B" Season***

The AP recommends the Council leave the pollock "B" season opening on September 1. Motion carries 19/3.

Certified: \_\_\_\_\_

Date: \_\_\_\_\_

**DRAFT  
MINUTES  
Scientific and Statistical Committee  
December 7 - 9, 1997**

The Scientific and Statistical Committee of the North Pacific Fishery Management Council met December 7-9, 1997 at the Anchorage Hilton Hotel in Anchorage, AK. All members were present with the exception of Marc Miller and Steve Klosiewski :

Keith Criddle, Chair	Jack Tagart, Vice-Chair	Doug Larson
Harold Weeks	Dan Kimura (Alt.)	Doug Eggers
Sue Hills	Richard Marasco	Terry Quinn
Al Tyler	Seth Macinko	

**D-1 SAFE/ABC SPECIFICATIONS**

Introduction

This is the second year under the new ABC and OFL guidelines in Amendment 44 approved by the Council in 1996. As shown in the recent NMFS report "Status of Fisheries in the United States", the NPFMC has the most extensive and conservative guidelines of all Councils. The analysts, Plan Teams, and SSC are following these guidelines in their ABC and OFL determinations this year. In a few cases, recommendations are even more conservative than those contained in the guidelines. In particular, Pacific cod, sablefish, and Atka mackerel ABCs are lower than the maximum allowed under the guidelines. The rationale for the downward adjustment (amplified for each species in its own section below) is that the biomass and/or recruitment for the species is declining and there is sufficient uncertainty in the stock assessment that the maximum ABC allowed may not be sustainable. Emerging evidence in stock assessment science suggests that what has traditionally been viewed as conservative harvesting may actually not be, due to failure to account for uncertainty in stock assessments. Thus, there is a need to undertake more formal risk assessments to provide management advice. The Pacific cod assessment in the NPFMC's SAFE's show one such approach. The NMFS Guidelines for revising overfishing definitions to comply with the Magnuson-Stevens Act are also likely to require more formal risk assessment and potentially lower ABC's.

In the next year, the SSC recommends that the Plan Teams and SSC collaborate to establish a general approach for risk assessment and downward adjustment of ABCs. While some of this will occur under the new overfishing analysis, some additional effort may be required. Rather than being prescriptive, the general approach should allow for a variety of methods to be used.

**D-1(a, b)      BERING SEA/ALEUTIAN ISLANDS**

**Pollock-Eastern Bering Sea**

The SSC received the Plan Team report from Dr. Grant Thompson, public testimony was presented by Ken Stump, Fran Bennis, and Ed Richardson.

The new assessment for EBS walleye pollock contains data from the 1997 combined trawl-hydroacoustic survey as well as updated age composition and catch data. Integration of the information by modeling consists of 2 traditional cohort analysis models and 6 new models based on a statistical age-structured model (SAM) framework. The SAM framework responds to past SSC concerns about uncertainty in model parameters and provides a more flexible framework for forecasting and model evaluation. Thus, the SSC concurs with the Plan Team that the SAM framework replace the traditional cohort analysis approach.

Within the SAM framework, two of the six models warrant attention for making an ABC determination. One model assumes that recruitment follows a Ricker spawner-recruit model with stochastic variation as has been done in past assessments (Model 1), while the other assumes constant stochastic variation about a mean value (Model 4). Both models fit the data equally well and provide similar estimates of biomass and other population parameters through 1997. Model 4 provides a lower forecast of 1997 year-class-strength (for age one in 1998) than Model 1, which results in a lower forecast of future biomass. Consequently, the 1998 ABC of 1.1 million mt from Model 4 is lower than the 1.3 million mt from Model 1. There is no information to justify one model over the other.

There are several uncertainties associated with the current assessment: (1) new modeling and recruitment projections, (2) the potential negative effect of Russia's Navarin Basin catches on the EBS stock, (3) the lack of diversity in age composition due to a succession of low recruitments, (4) a downward adjustment from last year to this year in the recruitment estimate of the 1996 year-class, (5) concentration of pollock harvests in time and space, the latter being in areas associated with declining sea lion populations. Optimistic counter-balance is found in the following information: (1) the 1996 year-class still appears strong despite not being as strong as estimated in last year's assessment, (2) the pollock population in 1997 is still above the estimated level that would produce MSY, (3) past assessments have tended to underestimate recent biomass, and (4) warm winter conditions in the past have often been associated with strong year-classes.

Attempting to balance the uncertainties with positive signals, the SSC agrees with the Plan Team that ABC be set to 1.1 million mt. It is based on a conservative projection of future year-class strength and a conservative choice of fishing mortality (based on  $F_{40\%}$ ). The SSC also agrees with the Plan Team's OFL determination of 2.06 million mt.

The current status of the western Bering Sea is very depressed as reflected by the very low catches of pollock in the western Bering Sea outside of the Navarin Basin in recent years. Since the 1995 season, the entire pollock fishery in the Russian zone has occurred in the Navarin Basin. These catches have been increasing and, in 1997, were believed to be in excess of 600 thousand tons. Because there is a high abundance of younger age pollock in surveys of shelf areas contiguous with Russian zone, the Navarin Basin is believed to be an important rearing area for eastern Bering Sea pollock. In view of the distribution of eastern Bering Sea pollock and the current status of western Bering Sea pollock, the Russian zone fishery in the Navarin Basin is currently supported by pollock of eastern Bering Sea origin.

The SSC is concerned that the collective removals of Eastern Bering Sea pollock by the U.S. and Russian zone fisheries may not be sustainable. The sustainability of current removals and specific impact of the Russian zone fishery on eastern Bering Sea pollock cannot be fully evaluated because of lack of stock assessment surveys of

the Navarin Basin, as well as information on ages and magnitude of removals of pollock in the Russian zone. The SSC notes that the current assessments of eastern Bering Sea pollock are conservative because they do not specifically consider the Russian zone removals or the surveyed abundance of pollock in the Navarin area. However, current rate of pollock removals in the Russian zone may be disproportionately high relative to pollock abundance, in which case the removals will result in depletion of the stock in the area and/or reduction of future recruitment of pollock to the eastern Bering Sea.

The SSC requests that further improvements be made in this assessment. First, a truncated data series beginning in 1978 was used, whereas data extend back to 1964. An analysis over a longer time period could elucidate an improved spawner-recruit relationship and a more direct relation of recruitment to environmental variables. Second, the incorporation of environment into the stock assessment model (Model 5) was based on a complicated submodel of larval dispersal, that did not fit the data significantly better. Several other environmental variables are available which have shown relationships to pollock recruitment and these should be investigated. Third, public testimony expressed concern over shifts in the spatial/temporal concentrations of pollock fishing effort during the first quarter of the year in designated critical sea lion habitat areas. The SSC suggests that additional research should be done to evaluate the distribution of fishing effort with respect to the spacial and seasonal shifts in pollock density. This point is further explored in our discussion of Ecosystem Considerations.

#### Pollock - Aleutian Island

In 1996, the Plan Team responded to a request from the SSC by presenting an age-structured assessment of Aleutian Island pollock. In accepting the estimated biomass from this model, the SSC noted the limited description of model structure, inputs and outputs. In September of this year, the SSC requested an embellished report for the December 1997 SAFE. Subsequently, the stock assessment authors provided greater detail of the AI pollock model. However, in contrast to the 1996 model evaluation, the stock assessment authors now report that model results "*..showed a fair amount of ambiguity.*" Due to a lack of confidence in the reliability of model outcomes, the authors recommend reverting to bottom trawl survey biomass estimates to derive ABC recommendations. The SSC is somewhat disappointed in this turn of events. It is our hope that, in the future, steps can be taken to obtain the requisite level of sampling to facilitate evaluation of AI stock abundance using age-structured models. Nevertheless, we concur with the Plan Team and stock authors decision to set AI pollock ABC based on bottom survey biomass estimates.

The bottom trawl survey estimates of stock abundance are reported for two distinct regions of the Aleutian Island chain: one from 165°W to 170°W ( Unalaska-Umnak area) and the other from 170°W to 170°E (Aleutian Region). Reports indicate that stock found in the Unalaska-Umnak area may be part of the EBS stock, and at any rate are likely to represent biomass already accounted for in the estimates of EBS pollock abundance. Therefore, ABC recommendations depend on bottom trawl biomass estimates from the Aleutian Region only. ABC is recommended to be 23,800 mt ( $0.75 * M * B_{97}$  or  $106,000 * 0.3 * 0.75$ ), the OFL is estimated to be 31,700 mt ( $M * B_{97}$ ). The SSC recommends that this ABC be partitioned among the western, central and eastern management areas of the Aleutian Region in order to mitigate potential impacts to marine mammals. The resultant division of the ABC using a rounded estimate based on a 20:44:36 split, is 4,700:10,500:8,600 mt for the western, central and eastern AI management zones respectively.

#### Pollock - Bogoslof

The SSC supports the Plan Team's ABC (6,410 mt) for Bogoslof Pollock. 1998 biomass was projected using a natural mortality rate of 0.2 applied to current year biomass (324,000 mt) based on the Bogoslof area hydroacoustic survey. Since estimates of B (current biomass),  $B_{0.40}$  (2,000,000 mt),  $F_{0.40}$  (0.27) and  $F_{0.30}$  (0.37) exist and  $\alpha \leq B/B_{0.40} < 1$ ,  $F_{ABC}$  was computed under tier 3b. The projected harvesting under the  $F_{ABC}$  (0.026)

fishing mortality gives the 1998 ABC of 6,400 mt.  $F_{OFL}$  was computed under tier 3b to be 0.035 and translated to exploitation rate and applied to 1998 biomass to give 1998 OFL of 8,750 tons.

#### BS/AI - Pacific Cod

Dr. Grant Thompson presented the Plan Team's report to the SSC. We heard public testimony on the anticipated impacts of a reduced ABC from Thorn Smith, Janet Smoker, Mike Szymanski, and Brent Paine. Additional public comment on ecosystem considerations associated with the Pacific cod fishery were provided by Ken Stump.

The SSC evaluated proposals for ABCs derived from the base case stock assessment model, and variants of the base case model. We also considered estimates based on trawl survey biomass and a 30% exploitation rate. Following extensive debate, the SSC concurred with the Plan Team's recommended ABC of 210,000 mt derived from the base case model and taking into consideration risk averse harvest strategies.

The Pacific cod stock assessment represents an application of a model introduced to us in 1996. The model is configured around a base case that uses fixed parameter values for natural mortality ( $M=0.37$ ) and trawl survey catchability ( $Q=1.0$ ). From the past assessment, we know that model outcomes are sensitive to these values. The specified values were drawn from previous sensitivity analysis. Nevertheless, the SSC remained concerned about the uncertainty associated with the choice of  $M$  and  $Q$ . The stock assessment authors undertook extensive, technically challenging, analysis to statistically evaluate the effects of altering the parameter values. To do so, the authors begin with a reasonable range of values for  $M$  and  $Q$ , based on literature reports, past modeling experience and logic. They then evaluate the model's fit, through the model likelihood, by systematically, substituting a range of paired values into the model. From this substitution, the authors derive refined probability based parameter values. They then compute a geometric average of the yield associated with the refined parameter space. This process produces an integrated estimate of yield under a wide range of probable parameter values, thus incorporating a sense of the uncertainty associated with these quantities.

The SSC had an extensive debate with respect to the methodology employed in the sensitivity analysis and the author's choice of initial parameter space. We explored the a reasonableness of the specified initial conditions, sensitivity of the model to alternative initial conditions, and the believability of the refined parameter space. We expressed some continued concerns at each critical decision point in the sensitivity analysis; however, we eventually accepted to the analyst's judgement and the sensitivity analysis as it was undertaken.

Stock condition for Pacific cod has been and continues to be in a state of decline. Even under the base case scenario the stock is expected to continue this decline over the next 5 years. Projected stock decline accounts for about half the proposed reduction in ABC, the remaining half is attributed to the lower recommended fishing mortality rate derived from the sensitivity analysis of  $M$  and  $Q$ . Three of the last four year-classes are estimated to be below average, with one above average year-class in this time series. Given the general trend in stock abundance, and the sensitivity analysis of uncertainty in key parameter values, the SSC believes there is sufficient rationale to accept the Plan Team's recommended ABC.

The SSC commends the stock assessment authors for their development of risk adverse advise in the face of parameter uncertainty. We encourage continued research and refinement of model processes and evaluation of key parameter uncertainty.

#### BS/AI- GOA (combined) - Sablefish

Dr. Mike Sigler (NMFS-Auke Bay) presented the sablefish stock assessment results. This species continues its downward trend as the strong age classes of the late 1970s and early 1980s exit the population. Spawning



biomass is currently at about 34% of the unfished level, and assuming a continuation of recent low recruitment patterns, is projected to reach a short term equilibrium at roughly 30% of the unfished level. The 1995 year class may be much stronger than average, but this group of fish has been observed only once and is only partially recruited to the survey.

The SSC support the Plan Teams' and assessment authors' recommendation for a combined ABC of 16,800 mt. This is based on a linear interpolation from last year's ABC to the projected short term equilibrium yield ( $F=0.085$ ). Overfishing levels are based on an adjusted  $F_{30\%}$  value ( $= 0.145$ ) prescribed under Tier 3. ABC and OFL levels are distributed among management areas based on exponentially weighted moving average of biomass distribution:

	<u>Average Biomass (%)</u>	<u>ABC (mt)</u>	<u>OFL (mt)</u>
Gulf of Alaska	84.06%	14,120	23,454
Eastern Bering Sea	7.73%	1,300	2,158
Aleutian Islands	<u>8.20%</u>	<u>1,380</u>	<u>2,288</u>
TOTAL	100%	16,800	27,900

The same averaging procedure has been used by the Council to apportion ABC within the Gulf of Alaska. Applying these percentages to the Gulf of Alaska ABC results in the following distribution:

	<u>GOA Biomass (%)</u>	<u>Presumed TAC (mt)</u>
Western Gulf	13.01	1,837
Central Gulf	44.79	6,324
West Yakutat	16.21	2,289
East Yakutat/SE Outside	<u>25.99</u>	<u>3,670</u>
TOTAL	100.00%	14,120

### BS/AI – Flatfish

#### Yellowfin sole

The SSC supports the Plan Team's ABC (220,000 mt) recommendation for this species. Stock synthesis was used to estimate exploitable biomass (1,961,500 mt) that was determined by applying age-specific fishery selectivity to the total biomass estimate (the 2+ biomass = 3,010,000 mt). Assuming that equilibrium recruitment can be approximated by the average of the time-series reported in this year's assessment,  $B_{0.40}$  (equilibrium female spawning biomass resulting from  $F_{0.40}$  harvest rate) is 593,000 mt. Since estimates of  $B$  (current female spawning biomass),  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  exist and  $B > B_{0.40}$  (756,500 t > 593,000 mt) the reference fishing mortality corresponds with tier 3a. For 1998  $F_{ABC} \leq F_{0.40} = 0.11$  and  $F_{OFL} = F_{0.30} = 0.16$ .  $OFL = 314,000$  mt.

#### Greenland turbot

The SSC supports the Plan Team's ABC (15,000 mt) recommendation for this species. The ABC recommendation is based on an estimated 1998 age 1+ biomass of 164,000 mt. This estimate was obtained from an analysis that assumed dome-shaped selectivity for each fishery and survey and constant natural mortality rate,  $M = 0.18$ . Model results indicated, that the best fit to the data was obtained when the slope survey abundance index represented about 5% of the biomass available to the survey. This value of "Q" or catchability is unreasonably low compared to values common for other flatfish species. Consequently, model fit was investigated for three fixed values of slope survey "Q": 0.25, 0.50 and 0.75. The most conservative biomass estimate was derived with  $Q=0.75$ . Because of the persistent low recruitment in recent years the authors chose

this more conservative model to estimate ABC. Last year, the SSC determined that reliable  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  estimates existed for this species. Therefore, this species qualified for management under tier 3. Updated estimates of these reference parameters from this year's assessment are 138,000 mt, 0.26 and 0.40, respectively. The projected spawning biomass for 1998 is 95,000 mt placing this species in sub-tier "b" of tier 3. Adjusted values of  $F_{0.40}$  and  $F_{0.30}$  are 0.17 and 0.27, respectively. OFL is 22,300 mt.

#### Arrowtooth flounder

The SSC supports the Plan Team's ABC (147,000 mt) recommendation for this species. Stock synthesis was used to estimate exploitable biomass (639,400 mt) that was determined by applying age-specific fishery selectivity to the total biomass estimate (the 1+ biomass = 869,000 mt). Assuming that equilibrium recruitment can be approximated by the average of the time-series reported in this year's assessment,  $B_{0.40}$  (equilibrium female spawning biomass resulting from  $F_{0.40}$  harvest rate) was estimated to be 43,600 mt. This value appears to be low for this species, and the SSC recommends that the team review the estimation of this value. Despite the apparent error in the  $B_{0.40}$  estimate, the SSC and Plan Team are confident that current spawner biomass exceeds the appropriately estimated  $B_{0.40}$ . Since estimates of B (current female spawning biomass),  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  exist and  $B > B_{0.40}$  (531,400 > 43,600 mt) the reference fishing mortality corresponds with tier 3a. For 1998  $F_{ABC} < F_{0.40} = 0.23$  and  $F_{OFL} = F_{0.30} = 0.36$ . OFL = 230,000 mt. It is noted that this year's assessment increased the emphasis on fitting the time series of biomass estimates from the EBS bottom trawl survey. This change increased model biomass estimates.

#### Rocksole

The SSC supports the Plan Team's ABC (312, 000 mt) recommendation for this species. The EBS 1997 bottom trawl survey resulted in a biomass estimate of 2,710,000 mt, a 24% increase relative to last year's estimate. The Aleutian Island bottom survey from 1997 resulted in a biomass estimate of 56,200 mt, 31% larger than the 1994 estimate. Stock synthesis was used to estimate exploitable biomass (1,894,500 mt) that was determined by applying age-specific fishery selectivity to the total biomass estimate (the 2+ biomass = 2,360,000 mt). Assuming that equilibrium recruitment can be approximated by the average of the time-series reported in this year's assessment,  $B_{0.40}$  (equilibrium female spawning biomass resulting from  $F_{0.40}$  harvest rate) is 267,000 mt. Since estimates of B,  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  exist and  $B > B_{0.40}$  (650,000 mt > 267,000 mt) the reference fishing mortality corresponds with tier 3a. For 1998  $F_{ABC} \leq F_{0.40} = 0.16$  and  $F_{OFL} = F_{0.30} = 0.23$ . OFL = 449,000 mt.

#### Flathead sole

The SSC supports the Plan Team's ABC (132, 000 mt) recommendation for this species. The EBS 1997 bottom trawl survey resulted in a biomass estimate of 808, 000 mt, a 31% increase relative to last years estimate. The Aleutian Island bottom survey from 1997 resulted in a biomass estimate of 16,200 mt, 5% larger than the 1994 estimate. It is recommended that  $F_{ABC} = F_{0.40} = 0.16$  be used to determine the 1998 ABC. OFL (190,000 mt) is determined by applying  $F_{0.30} = 0.23$ .

#### Other flatfish complex

The SSC supports the Plan Team's ABC (164, 000 mt) recommendation for these species. Within this complex, sufficient data were only available to construct an age-structured analysis for Alaska plaice. Bering Sea and Aleutian Islands trawl survey biomass estimates were used to determine the ABC for other species in this complex (Dover sole, rex sole, starry flounder, english sole, longhead dab, and butter sole). The 1998 stock synthesis estimate of exploitable biomass for Alaska plaice is 522,000 mt. The 1997 survey based exploitable biomass for other species in this complex is 79,800 mt. The Plan Team determined the 1998 age 1+ biomass for this complex to be 789,000 mt. It is noted that the bottom trawl survey estimates for both Alaska plaice and

other species in this complex were up over 1996 values, 22% and 17% respectively. Assuming that equilibrium recruitment can be approximated by the average of the time-series produced by the stock synthesis analysis,  $B_{0.40}$  is estimated to be 112,000 mt for Alaska plaice. The corresponding estimate of the 1998 spawning biomass is 232,700 mt. Since estimates of  $B$ ,  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  exist and  $B > B_{0.40}$  (233,000 mt > 112,000 mt) the reference fishing mortality for this species corresponds with tier 3a. For 1998  $F_{ABC} \leq F_{0.40} = 0.29$  and  $F_{OFL} = F_{0.30} = 0.45$ . Alaska plaice ABC and OFL are 151,000 mt and 235,000 mt, respectively. The ABC and OFL for the remaining species in this complex were determined by applying the  $F_{0.40}$  and  $F_{0.30}$  for flathead sole, 0.16 and 0.23, respectively to 79,800 mt. Values for these two reference points are 12,770 mt and 18,350 mt, respectively.

**BS/AI - Pacific ocean perch (POP) complex**

**True POP, Eastern Bering Sea.** The SSC supports the Plan Team's ABC (1,400 mt) for this species. A stock synthesis model with decreased emphasis on fitting the biomass estimated from the EBS trawl survey and increased emphasis on fitting the fishery size composition was used to estimate 1998 spawning biomass (23,900 mt). Since estimates of  $B$  (current spawner biomass),  $B_{0.44}$ ,  $F_{0.44}$ , and  $F_{0.30}$  exist and  $\alpha \leq B / B_{0.44} < 1$ ,  $F_{ABC}$  was computed under tier 3b. The projected harvesting under the  $F_{ABC}$  (0.031) fishing mortality gives the 1998 ABC of 1,400 mt.  $F_{OFL}$  was computed under tier 3b to be 0.056. The 1998 OFL of 3,300 mt does not correspond exactly to a fishing mortality rate of 0.056 but was developed in an analogous fashion.

**True POP, Aleutian Islands.** The SSC supports the Plan Team's ABC (1,400 mt) for this species. Stock synthesis was used to estimate 1998 spawning biomass (129,900 mt). Since estimates of  $B$  (current spawner biomass),  $B_{0.44}$ ,  $F_{0.44}$ , and  $F_{0.30}$  exist and  $\alpha \leq B / B_{0.44} < 1$ ,  $F_{ABC}$  was computed under tier 3b. The projected harvesting under the  $F_{ABC}$  (0.055) fishing mortality gives the 1998 ABC of 12,100 mt.  $F_{OFL}$  was computed under tier 3a using an  $F_{0.30}$  of 0.096. The 1998 OFL was 20,700 mt. The ABC was apportioned among AI subareas based on survey distribution as follows: Western AI = 5,580 mt, Central AI = 3,450 mt, and Eastern AI = 3,070 mt.

The SSC notes that the Team used the more conservative  $F_{0.44}$  criteria when specifying ABC's and OFL's for BSAI POP. The SSC notes that rate was selected based on prior GOA analysis. Given revisions to the GOA assessment, the authors should review whether this value remains appropriate for BSAI stock.

**Other rockfish, Eastern Bering Sea and Aleutian Islands.** The SSC supports the Plan Team's ABC for the following groups. ABCs were calculated under Tier 5 using 75% of natural mortality applied to averaged biomass estimates. OFLs were calculated applying natural mortality to average biomass.

<u>Species Group</u>	<u>M</u>	<u>Biomass</u>	<u>ABC</u>	<u>OFL</u>
<u>Aleutians</u>				
Northern/Sharpchin	0.06	94,000 t	4,230	640
Shortraker/Rougheye	0.030/0.025	24,900 t/21,600 t	965	1,290
Other rockfish	0.07	13,000 t	685	913
<u>Eastern Bering Sea</u>				
Other red rockfish	0.06/0.030/0.035	693 t/8,230 t/2,710 t	267	356
Other rockfish	0.07	7,030 t	369	492

Surveys of rockfish in the Eastern Bering Sea have been sporadic, involved different survey vessels, and survey areas have been inconsistent. EBS slope trawl surveys have not been conducted since 1991, and portions of the EBS portion of the Aleutian Islands survey have been used to provide indices of biomass for recent years. There is much uncertainty in the survey estimates of biomass for rockfish in the EBS area. To compensate for incomplete surveys, the Plan Team reconstructed biomass for missing survey years and used average biomass estimates in lieu of recent year surveys.

The SSC notes that ABC and OFL for EBS other red rockfish are substantially lower than last year. This resulted from exclusion of an outlier data point (i.e., the 1986 biomass for EBS northern rockfish). There was concern expressed in public testimony that the reduced OFL might constrain other fisheries.

The SSC notes that stock assessment surveys of the Aleutian Islands area have been more consistent in area coverage and methods, and are expected to continue in the future. To address the poor and continuing erosion of EBS rockfish assessment surveys, the SSC suggests that the Team consider integrating the assessment of EBS and Aleutian Islands rockfish. The SSC believes that in view of the large portion of the stock in the Aleutian Islands area and the similar trend in POP abundance in the two areas, trends in abundance can be more accurately estimated by an integrated assessment. The Team should consider developing an integrated stock synthesis approach for true POP, as well as an assessment approach that emphasizing more recent biomass estimates for other rockfish species. The SSC notes that in an integrated assessment, the relative biomass magnitudes from historical comprehensive surveys could be used apportion ABC to AI subareas and EBS consistent with the current separate area assessment.

BS/AI - Atka Mackerel

The SSC support the Plan Team's and chapter authors recommendations of an ABC of 64,300 mt and an OFL of 134,000 mt. We also agree with their apportionment for the AI subareas: Western AI = 27,000 mt, Central AI = 22,400, and Eastern AI = 14,900 mt.

Although  $F_{40\%}$  is allowed as the maximum  $F_{ABC}$  for Atka mackerel under Tier 3a of Amendment 44, the continued decline of the stock as seen in the 44% decline of the estimated survey biomass from 1997 survey relative to that from 1994, the difficulty in assessing this species, and concerns relative to local depletion and marine mammals prompted recommendation of a lower ABC. The recommended ABC results in a fishing mortality rate  $F_{52\%} = 0.23$ . Short term projections of spawner biomass at this F remain within 10% of the estimated  $B_{40\%}$  spawning biomass.

Ken Stump, Fran Bennis and Dave Fraser gave public testimony. Concerns regarding compression of the fishery in space and time and the resulting localized depletion are treated in the Ecosystem Considerations Section.

The chapter authors presented their arguments for keeping the BS/AI and GOA Atka mackerel assessment separate. Since it appears that the BS/AI and GOA stocks are inter-related, the SSC recommends that consideration of possible future integrated assessments remain open for discussion.

BS/AI - Squid and Other Species

The SSC concurs with the Plan Team's recommendation for acceptable biological catch and overfishing levels.

	<u>ABC</u>	<u>OFL</u>
Squid	1,970	2,620
Other Species	25,800	134,000

Dick Tremaine (Central Bering Sea Fishermen's Association) provided public testimony requesting efforts be made to obtain biomass and natural mortality estimates for squid to move it out of the Tier 6 category for ABC recommendations. He points out that CDQ fisheries have the potential to be constrained by squid allocations, even absent any mortality exceeding the Council's ABC level on an aggregate basis.

## D-1 (d, e) GULF OF ALASKA

The NMFS proposal to implement the trawl closure for the eastern gulf has resulted in some controversy regarding distribution of ABCs. The SSC has not attempted to set independent ABCs for species harvested in the West Yakutat/East Yakutat/Southeast Outside management areas, with the exception SEO Shelf Demersal Rockfish. Development of strategies for ABC distribution in the eastern gulf will require further Plan Team deliberations.

### GOA - Pollock

The SSC agrees with Plan Team's recommended ABC and OFL with one minor exception. As reported in 1996, we remain unconvinced that the Prince William Sound pollock fishery exploits a resource that is independent of the assessed GOA pollock population. The SSC hopes that a planned age-structured analysis of Eastern gulf pollock stock will shed some light on this issue. The 1998 Guideline Harvest Level for the PWS fishery is 1800 mt of pollock. The SSC recommends that this quantity be subtracted from the Gulf-wide ABC in proportion to the regional ABCs for the Western/Central and Eastern gulf.

The Plan Team's recommended ABC was 120,800 mt for the W/C gulf and 11,000 mt for the Eastern gulf for a combined total of 131,800 mt. Subtracting anticipated PWC harvest, the revised gulf-wide ABC would be 130,000 mt, representing 119,150 mt for the W/C gulf and 10,850 mt for the Eastern gulf. The W/C ABC is proportionately split among sub-regions such that 29,790 mt to western gulf area 61, 50,045 mt to central gulf area 62, and 39,315 mt for central gulf area 63. The SSC has no recommendation for splitting the Eastern gulf ABC.

Estimated GOA pollock biomass has increased in recent years based on the strength of the 1994 year class. This year class is reported to be the strongest year class on record. The 1989 year class also continues to contribute to the fishery. While estimated stock abundance is increasing, the 1997 Shelikof hydroacoustic survey biomass has declined by 23% compared to 1996. The 1996 bottom trawl survey estimates are relatively unchanged from those reported in 1993. Projected 1998 spawning biomass is 96% of the  $B_{40\%}$  target spawning biomass. Recommended ABCs represent anticipated exploitation levels of approximately 10%, which the SSC regards as very conservative.

The SSC heard testimony from Rich Ferrero, the NMFS/MML, with respect to a proposal to amend the seasonal apportionment of GOA pollock TACs. The SSC supports this recommendation as a device to mitigate potential fishing induced impacts on the endangered Steller sea lions.

### GOA - Pacific Cod

The SSC concurs with the Plan Team's recommended 77,900 mt ABC for GOA Pacific cod. Structurally, the GOA Pacific cod model is essentially identical to the BS/AI model. The SSC concerns with respect to model specifications are discussed under the BS/AI portion of the minutes. We do note for the record that the analysts incorporated catch and biological data from the State of Alaska fisheries, which we regard as a positive response to SSC request.

### GOA - Flatfish

The SSC supports the Plan Team's ABC recommendations for species in this complex. This complex is subdivided into deepwater flatfish, rex sole, shallow water flatfish, and flathead sole. Species in the deepwater complex are Dover sole, Greenland turbot, and deep-sea sole. Northern rock sole, Southern rock sole, yellowfin sole, starry flounder, butter sole, English sole, Alaska plaice, and sand sole make up the shallow water complex.

The 1998 exploitable biomass for each is based on abundance estimates from the 1996 triennial trawl survey except for Greenland turbot and deep-sea sole. Estimates for these latter two species were not developed because none were caught in the survey. Exploitable biomass estimates, ABCs and OFLs are given below:

<u>Fishery</u>	<u>Exploitable biomass</u>	<u>ABC</u>	<u>OFL</u>	<u>Tier</u>
Deepwater flatfish	101, 430 mt	7,170 <sup>mt</sup>	9, 440 mt	6
Rex sole	72, 330 mt	9,150 mt	11, 920 mt	5
Shallow water	314, 960 mt	43,150 mt	9, 540 mt	4,5,5
<u>Flathead sole</u>	<u>206, 340 mt</u>	<u>26,110 mt</u>	<u>34, 010 mt</u>	<u>5</u>

\*For Greenland turbot and deep-sea sole ABC = 0.75\* average catch.

Corresponding fishing mortalities and OFL rates are:

	<u>Species</u>	<u>F<sub>ABC</sub></u>	<u>F<sub>OFL</sub></u>
Deepwater	Dover sole	0.075	0.10
Shallow water	Rock sole	0.17	0.25
	Rex sole	0.15	0.20
	Yellowfin sole	0.15	0.20
	Other flatfish	0.15	0.20
<u>Flathead sole</u>		<u>0.15</u>	<u>0.20</u>

It is recommended that the ABCs for each group be apportioned among the three regulatory areas in proportion to biomass distributions associated with the 1996 bottom trawl survey. The SSC concurs with the Team's recommendation that effort be devoted to development of maturity schedules for flatfish species. The SSC also supports the recommendation, that deep sea sole be included in the deepwater grouping. In previous annual specifications it was in the shallow water grouping.

#### GOA - Arrowtooth flounder

The SSC supports the Plan Team's ABC and OFL recommendations for this species. A stock synthesis analysis was used to estimate the 1998 age 3+ biomass (2,062,740 mt) for this species. The corresponding  $B_{0.40}$  was determined to be 678, 000 mt. Since reliable estimates of  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  are available and the 1998 spawning biomass is projected to be 1,007,000 t, this species was determined to fall into tier 3a. The ABC (208,000 mt) was determined using  $F_{0.40} = 0.189$ , and OFL (296,000 mt) was estimated using  $F_{0.30} = 0.276$ . It recommended that the ABC be apportioned among the three management areas in proportion to the 1996 survey: Western (33,010 mt), Central (149,640 mt) and Eastern (25,690 mt).

#### GOA - Slope Rockfish

Pacific Ocean Perch. The SSC supports the Plan Team's ABC (12,820 mt) for this species. A new version of the stock synthesis model with better estimation properties was used to estimate 1998 spawning biomass (107,200 mt). However, the transition to the new version of the software produced some unexpected results which will require further investigation. Since estimates of B (current spawner biomass),  $B_{0.40}$ ,  $F_{0.40}$ , and  $F_{0.30}$  exist and  $\alpha \leq B / B_{0.40} < 1$ ,  $F_{ABC}$  was computed under tier 3b. The projected harvesting under the  $F_{ABC}$  (0.055) fishing mortality gives the 1998 ABC of 12,820 mt.  $F_{OFL}$  was computed under tier 3b to be 0.056. The 1998 OFL under tier 3b was 18,090 mt. Using area apportionments of 14.1 % for the Western Area, 51.5% for the Central Area, and 34.4% for the Eastern results in recommended ABCs of 1,180 mt for the Western Area, 6,600 mt for the Central Area, and 4,410 for the Eastern Area. Using the same apportionments results in overfishing levels of 2,220 for the Western area, 9,320 for the Central Area, and 6,220 for the Eastern Area.

Shortraker/Rougheye The SSC supports the Plan Team's ABC (1,590 mt) for this species. As little new survey information is available for this species, the recommended ABCs were set equal to the values adopted by the Council for 1997. Exploitable biomass were the averaged of the three most recent surveys and 16,673 mt for shortraker rockfish and 48,709 mt for rougheye rockfish. Using tier 5 for shortraker rockfish and tier 4 for rougheye results in ABC of 1,590 for the group (370 mt for shortraker and 1,110 for rougheye) and OFL of 2,740 for the group. The ABC were apportioned as 160 mt to Western area, 970 mt to Central Area, and 460 mt to Eastern Area.

Northern Rockfish. The SSC supports the Plan Team's ABC (5,000 mt) for this species. As little new survey information is available for this species, the recommended ABCs were set equal to the values adopted by the Council for 1997. The recommended  $F_{ABC} = M = 0.06$ , is less than that allowed under tier 4. The exploitable biomass is 83,370 mt. Applying the  $F_{ABC}$  results in ABC of 5,000 mt. The  $F_{0.30}$  rate was applied results in OFL of 9,420 mt. Distributing this ABC based on the same method used for POP results in ABCs of 840 mt for the Western area, 4,150 for the Central area, and 10 mt for the Eastern area.

Other Slope Rockfish. The SSC supports the Plan Team's ABC (5,260 mt) for this species. As little new survey information is available for this species, the recommended ABCs were set equal to the values adopted by the Council for 1997. A tier 4 strategy was used for sharpchin rock fish, and tier 5 strategy for other species within the group. The combined ABC (5,260 mt) was apportioned using the same method used for POP and results in ABCs of 20 mt for Western area, 650 mt for Central area and 4,590 mt for Eastern area. The OFL is 7,560 mt.

#### Pelagic Shelf Rockfish

The SSC accepts the Plan Team recommendation for ABCs for the Pelagic Shelf Rockfish. We point out that this recommendation is complicated by the pending change in the GOA FMP which would remove nearshore pelagic rockfish (i.e., black and blue rockfish) from the FMP. Since the proposed amendment has not yet been enacted as a final rule, the we are obliged to create separate ABCs for nearshore and offshore pelagic rockfish. The nearshore ABC is 260 mt for the Central GOA only. The offshore ABC is 5,000 mt. When the final rule for Amendment 46 has been adopted, the ABC for the offshore component of the Pelagic shelf rockfish should be adjusted to 4,880 mt. ABCs are based on trawl survey biomass under an  $F=M$  exploitation strategy. Exploitation rate is 9%. Stock biomass including black and blue rockfishes is 55,580 mt. Stock biomass without black and blue rockfish is 54,222 mt. The overfishing level is based on an  $F_{30\%}$  exploitation rate, 15%, resulting in a Gulf-wide OFL of 8,390 mt.

#### GOA - Demersal Shelf Rockfish

This analysis has been updated in terms of available data and methodology. The SSC supports the analysts' 1998 estimates of ABC = 560 mt and OFL = 950 mt. However, the SSC would like to see more details from the assessment concerning the accuracy of measurement of habitat area, and the quality of estimates from the line transect model (e.g. frequency distributions of observed and predicted perpendicular distances and which sighting model was used). Although we concur with the conservative approach to estimating biomass, the logic for estimating total biomass as the sum of the lower 90% confidence limits (LL) on a district basis should be better explained. Recall that the sum of the 90% LL's does not represent a 90% LL for the population total.

#### GOA- Thornyhead Rockfish

The SSC notes that improvements to the stock assessment model have been made and agrees with the Plan Team on the recommended ABC of 2,000 mt and OFL of 2,840 mt. The SSC further agrees that the ABC should be allocated to Western, Central and Eastern regions as 250, 710, 1,040 mt, respectively.

The SSC notes that the stock assessment model does not fit the trends in longline and trawl abundance particularly well. There is no evidence of any strong recent recruitment in the data and therefore there is a need for a survey on the slope to provide better abundance information.

#### GOA - Atka Mackerel

The SSC agrees with the Plan Team's and authors' recommendation that the ABC be set at 600 mt. The only new information presented was updated catch information which allowed reduction of the ABC from last year's 1,000 mt with reasonable assurance that other fisheries will not be constrained. This year's ABC is decreased from last year to insure that no targeting or topping off will occur on this stock.

The OFL is 6,200 mt based on the average catch from 1978-1995.

The chapter author presented information supporting the continued separation of the BS/AI and GOA stock. The SSC will continue to discuss the issue.

#### **D-1(e) Halibut Discard Mortality Rates**

Gregg Williams (IPHC) briefed the SSC on the revised halibut bycatch discard mortality rates. Gregg also reported on (1) investigations from the flathead sole fishery resulting in different DMRs for catcher vessels as opposed to catcher processors, and (2) an investigation into seasonal differences in DMRs in the deep water flatfish fisheries of the GOA.

The SSC supports continuing efforts to use observer data to further understand those elements of fishing practices which influence halibut discard mortality rates. The SSC recommends that standard errors be reported on the estimates to aid the comparison of estimates over time or among gear types. Some apparent differences may simply be a consequence of sampling variability.

#### **SAFE Ecosystem Chapter**

Dave Witherell presented the staff report. This chapter continues to be a dynamic effort to keep the Council and interested public abreast with changing ecological conditions and our understanding human impacts on marine ecosystems. New sections in the current chapter include an overview of the precautionary approach an update on essential fish habitat, options in Steller sea lion recovery, oceanographic effects on North Pacific groundfish and anecdotal information from the fishing fleet, coastal communities and agencies. Other sections are updates and expansions of sections introduced in earlier versions.

The SSC highlights for the Councils attention several multispecies concerns which lie at the interface of sea lion conservation and fisheries management. Both fishers and sea lions should be viewed as "intelligent" predators; in many cases they compete for common prey. Prey availability is increasingly understood to be important to sea lion conservation and recovery. Thus, the magnitude, timing, and location of major fisheries targeting sea lion prey species, particularly Atka mackerel and walleye pollock, become a focal concern. Foraging success for sea lions, is clearly related to the probability of encounter with prey species, thus localized depletion of common target or forage species is an important issue. Localized depletion has been documented to some degree for Atka mackerel. Often the issue of prey availability results in calls for reduced quotas for forage species. While this is one approach, the SSC notes that temporal or spatial displacement of fisheries that may compete with Steller sea lions during critical times (late lactation and initial pup foraging in late fall and early winter) could have the same effect of improving forage availability. We encourage further exploration of the tradeoffs between



adjustment of fisheries removals, timing and location as means to improve sea lion forage availability and/or reduced disturbance.

We also encourage NMFS to renew its efforts to develop an experimental design to evaluate the effectiveness of exclusion zones of various sizes around sea lion rookeries and haulouts. Such an evaluation of trawl exclusion zones would also be very valuable with respect to crab bycatch management measures in Bristol Bay and related benthic habitat impacts.

#### **Other - Plan Team Nominations**

The SSC concurs with the appointments of Mr. Al Spalinger to the Bering Sea Crab Plan Team and Mr. Jeff Barnhart to the Scallop Plan Team.

#### **Inshore/Offshore 3 Update:**

Staff presentation was made by Chris Oliver and Darrell Brannan. Public testimony was given by John Gauvin (Groundfish Forum), Paul MacGregor and Ed Richardson (At-Sea Processors Association), and Rebecca Baldwin (North Pacific Seafood Coalition).

The SSC has the following general observations:

- 1) The analysts provide a valuable service to the Council community by laying out in detail the main parameters that go into an analysis of net benefits and distributional effects with associated uncertainty/controversy, and by laying out the assumptions they anticipate needing to make.
- 2) There is great latitude, generally, in the bases on which Council decisions can be justified and the degree of quantification which is possible and appropriate.
- 3) Adequate treatment of different sectors is an overriding consideration in constructing the analysis and report.
- 4) The SSC pointed out a number of areas where the document may be misinterpreted and made suggestions for specific modifications to the analysis.

#### **Specific Observations:**

- 1) There are no good bases or models for quantitatively predicting how patterns of product form, market share, prices, etc. may change. The analysis should consider variability and uncertainty in these parameter estimates.
- 2) A fundamental point is that by having to assume constant prices and ignoring changes in costs, as in Assumption 5, no new information is presented to the Council by calculating changes in gross earnings. Gross earnings changes are directly proportional to changes in quotas that result from the Council-preferred alternative.
- 3) Product Recovery Rates (PRRs) are variable, due to things such as sampling error in the estimates of total catch. They are also subject to change as industry learns and as importance of increased utilization is fully appreciated.
- 4) Changes in consumer's surplus will result partly from supply shifts due to the Council's choice of a preferred allocation. In some markets, consumer's surplus will increase, and in others it will decrease. It is not possible to

net these out without information on the relevant demand and supply elasticities. A qualitative discussion of producer's surplus changes should also be included. However, it may not be possible to conclude what the net direction of impact will be.

5) Assumption 15 should be re-focused from "entry-exit" and "investment-disinvestment" issues to fishery substitution patterns that may be induced by different allocations, and given a higher priority in the analysis.

6) Exchange rate effects in foreign product markets should be qualitatively discussed.

7) Regional shifts in taxes (landings, sales, corporate, income, etc.) are likely to result from changes in the allocation. These shifts may be difficult to trace, and likely represent second-order impacts.

8) The document should be careful to clearly define terms (e.g., what is meant by 'threshold analysis') so that they are understandable to all interested parties.

9) The issue of voluntary industry data submissions presents a challenge to the analysts. While the SSC welcomes and encourages industry cooperation, methods and standards for appropriate integration of such data into the analysis are not yet clearly established and will require further consideration by the staff and SSC.